JOURNAL

OF

SYMBOLIC LOGIC

EDITED BY

ROD DOWNEY. Coordinating Editor Françoise Delon John Etchemendy Robert Goldblatt Martin Grohe Greg Hjorth Michael Rathjen Simon Thomas

> Volume 68 · Number 4 · December 2003 ISSN 0022-4812

PUBLISHED QUARTERLY BY THE ASSOCIATION FOR SYMBOLIC LOGIC, INC. WITH SUPPORT FROM INSTITUTIONAL MEMBERS

Copyright ©2003 by the Association for Symbolic Logic. All rights reserved. Reproduction by photostat, photo-print, microfilm, or like process by permission only.

TABLE OF CONTENTS

Universally Baire sets and definable well-orderings of the reals, by Sy D.	
FRIEDMAN and RALF SCHINDLER	1065
A theory for Log-Space and NLIN versus co-NLIN, by CHRIS POLLETT 1	1082
The axiom of choice and combinatory logic, by ANDREA CANTINI	1091
Ranked partial structures, by TIMOTHY J. CARLSON	1109
Simple stable homogeneous groups, by ALEXANDER BERENSTEIN	1145
Cardinal-preserving extensions, by SY D. FRIEDMAN	1163
Partitioning large vector spaces, by JAMES H. SCHMERL 1	1171
An application of Kochen's theorem, by MICHAEL C. LASKOWSKI	1181
Recovering ordered structures from quotients of their automorphism groups,	
by M. GIRAUDET and J. K. TRUSS	1189
A computably categorical structure whose expansion by a constant has	
infinite computable dimension, by DENIS R. HIRSCHFELDT, BAKHADYR	
KHOUSSAINOV, and RICHARD A. SHORE	1199
Parallel strategies, by PAVEL PUDLÁK	1242
Finite-to-one maps, by THOMAS FORSTER	1251
Additivity properties of topological diagonalizations, by TOMEK	
BARTOSZYNSKI, SAHARON SHELAH, and BOAZ TSABAN	1254
Distinguishing types of gaps in $\mathscr{P}(\omega)/\text{fin}$, by TERUYUKI YORIOKA	1261
A short proof of the strong normalization of classical natural deduction with	
disjunction, by RENÉ DAVID and KARIM NOUR	1277
Proof normalization modulo, by GILLES DOWEK and BENJAMIN WERNER	1289
Categoricity and U-rank in excellent classes, by OLIVIER LESSMANN	1317
Ordering MAD families à la Katětov, by MICHAEL HRUŠÁK and SALVADOR	
García Ferreira	1337
The cofinality of the infinite symmetric group and groupwise density, by JÖRG	
Brendle and Maria Losada	1354
The Kolmogorov-Loveland stochastic sequences are not closed under	
selecting subsequences, by WOLFGANG MERKLE	1362

(Continued on inside back cover)

THE JOURNAL OF SYMBOLIC LOGIC (ISSN 0022-4812) is published quarterly, in the months of March, June, September, and December, by the Association for Symbolic Logic, Inc.,124 Raymond Avenue, Poughkeepsie, NY 12604-0001, USA. Periodicals postage is paid at Poughkeepsie NY and at additional mailing offices. The JOURNAL is distributed with THE BULLETIN OF SYMBOLIC LOGIC; the 2003 annual subscription price for the two journals is \$450. Online subscription is available from Project Euclid; visit http://projecteuclid.org/jsl. Postmaster: Send address changes to The Journal of Symbolic Logic, Journals Division UIP, 1325 South Oak Street, Champaign, IL 61820-6903, USA. Business correspondence should be sent to the Secretary-Treasurer of the Association, Charles Steinhorn (address on inside back cover).

The BULLETIN and the JOURNAL are the official organs of the Association for Symbolic Logic, an international organization for furthering research in symbolic logic and the exchange of ideas among mathematicians, philosophers, computer scientists, linguists, and others interested in this field.

The JOURNAL invites submission of (1) original technical papers in the field of symbolic logic, (2) expository papers in this field, (3) papers whose main point is philosophical and which either bear upon logic or make use of its methods, and (4) studies in the history of logic in which modern technical developments are taken into account.

10 9 8 7 6 5 4 3 2 1 08 07 06 05 04 03

Continued on inside back cover